

Work Order ID 59391

Thursday, June 03, 2010 11:23:17 AM



Page 1

Item ID: D315-668-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube LH

Start Date: 6/3/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/14/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: H

Date: 10-9-03

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2904

Rev B

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPPD315-668-011

CHG 001

8/10/23



HJ for BG 10/07/22

359391

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Run

Start

Stop

Sequence ID/
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DescriptionSet Up/
Run Hours

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Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110



Skidtubes

Skidtubes

Skidtubes

Memo

LANDING GEAR RESOURCE 1

1-Cut D2904b to length as per dwg D2904

2-Drill aft and fwd cap holes as per dwg D2904 using DT8025 jig
(DO NOT OPEN TO FINISH SIZE)3-Drill saddle holes (6 Deg) as per Dwg D2904 using DT8938A jig
(ENSURE THAT LOCATOR RING IS SET FOR LH TUBE)4-Drill GHW holes (3 Deg) as per Dwg D2904 using DT8938B jig
(ENSURE THAT LOCATOR RING IS SET FOR LH TUBE)5-Insert and cleco doublers and DT8938d in position. Transfer all 256 holes thru
tube and doublers.

6-Remove doublers and identify batch# and orientation

7-C'sink Rivet holes 256 places as per Dwg D2904 and deburr

8-Locate from saddle holes, drill wearplate holes using DT8994. Jig must be 1.7"
from aft end of tube (REF)9-Remove fwd and aft indexing ridges as per dwg D2904. Open fwd and aft cap
holes to finish size, scribe batch# at aft end of tube.

10-Remove marks left from drill jig and deburr

DP 10-6-7

M 10/6/8

DP 10-6-9

DP 10-7-12

M 10/6/10

DP 10-7-12

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Run

Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

S 10607/12



130

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing



10-7-12

140

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control



101712

W/O:		WORK ORDER CHANGES					
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run

Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

0.00



Skidtubes

0.00

Skidtubes

Memo

Skidtubes

LANDING GEAR RESOURCE 1

1-Remove alodine around X-Bolt holes on doublers

2-Rivet doublers as per Dwg D2904.(DO NOT INSTALL RIVETS AROUND X-BOLT HOLES AT THIS TIME)

3-Open X-Bolt spacer holes to finish size as per dwg D2904.(DO NOT USE CUTTING FLUID)

4-C'sink and deburr X-Bolt spacer holes, prepare for Welding.

5-Blow all chips from inside tube

6-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting
Pick:

Qty ☐ Part Number ☐ Description ☐ Batch
A/R ☐ ☐ Sikaflex-291 ☐ M113519 ☐
Sikaflex expire date: 10-11-20
Start Time: 3:30pm Date: 10-7-13
Fin Time: 3:00pm Date: 10-7-14

DP

10-7-13

PTO

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10.06.09	110	USE CR3212-403 RIVETS B/N M114450 (80) INSTEAD OF MS20601AD4W3 M114869 +76 FSHERS = 240 ¹⁶ FOR MS20601 FSRRAR = 664 ¹⁶ FOR CR3212 (177)	BE	10/07/15		UP 10.06.09 DSY 032	S 10/07/15	

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10.06.09	110							

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Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

LANDING GEAR RESOURCE 1

1-Weld crossbolt spacers D2909as per Dwg. D2904and QSI 004.

For D2579 spacers, weld one side, pass Y" drill, weld other side, pass Y" drill
A/R□□□ Aluminum Rod

M112507

2-Grind welds as per Dwg D2909

3-Install remaining rivets around X-Bolt spacer , use rivet shaver as necessary

4-Deburr,inspect tube for any visible scratches

BE 10/07/14

BE 10/07/15

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/10/07/15



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Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

QC10- Inspect visual per QSI004- ground welds

0.00

QC

Memo

0.00

Quality Control

190

Pressure Wash per QSI005 4.3

0.00

HandFinish

Memo

0.00

Hand Finishing

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

Powdercoat

Memo

0.00

Powder Coating

POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

3.35
350°
8:05

1 BL 10-7-19

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Reference:

Run

Start

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

QC3- Inspect Part Finish

0.00

2) 10/07/20



QC

Memo

0.00

Quality Control

X1

0

220

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

HAND FINISHING RESOURCE #1

2) 10/07/20

X1

0

- 1-Install inserts & wearplates as per Dwg. D2904. Use a drop of Sikaflex on insert holes before installing wearplates
A/R ☐ ☐ ☐ Sikaflex-291 ☐ 11/15/04
Sikaflex expire date: 11/01

- 3-Inspect for foreign object per QSI 024

- 4-Install 2646 Aft & fwd Caps as per Dwg D2904 and seal with Sikaflex. Clean excess adhesive

- A/R ☐ ☐ ☐ Sikaflex-291 ☐ 11/15/04
Sikaflex expire date: 10/01

- 5-Wing Walk as per Dwg D2904 and QSI 005

4.4

Batch

M14432

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QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

240

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

250

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control



S 10/6/20

40

C 10/7/20

10/07/20

MF 10-7-20

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[illegible][illegible]**Required Date: 6/14/2010**

Required Qty: 1.00

[illegible]

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Picklist Print

Page 2

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Work Order ID: 59391



Parent Item: D315-668-011



Parent Item Name: Skidtube LH

Start Date: 6/3/2010

Required Date: 6/14/2010

Comments: IPP Rev:A New Issue 07-04-12 JLM
IPP Rev:B remove seq. 19 (handfinish wing walk) 08-04-30 DD verified
by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Qty per Kit	Total	Qty	Date	Status
D2912		Manufactured	No			150	Each	22.0000	2	2			
Doubler													

Location

Loc Qty

Loc Code

ST030

22

36929

22

MS20601-AD4W3

Purchased

No

150

Each

4,028.000

256

256

Rivet

Location

Loc Qty

Loc Code

ST321

4000

114538

4000

ST322

28

113899

28

D2905

Manufactured

No

160

Each

2.0000

1

Web, 315 Skidtube

Location

Loc Qty

Loc Code

LG

2

57333

2

B59393 ①

DD 10-7-13

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Shop Packet Print

Page 2

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by:EC

Start Date: 6/3/2010

Required Date: 6/14/2010

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Qty per Kit	Total	Qty	Date	Status
ALS4-1032-130		Purchased	No			220	Each	5,999.000	50	50			
													
Insert													

Location

Loc Qty

Loc Code

PKG11

5000

114723

5000

ST282

390

110511

38

114407

352

ST381

609

114654

609

AN960JD10L

NAS1149D0332J

Purchased

No



Washer

220

Each

3,878.000

54

54

Location

Loc Qty

Loc Code

ST348

3878

110985

3878

D2646

Manufactured

No



Aft Cap

220

Each

109.0000

2

2

Location

Loc Qty

Loc Code

FP-4

99

57332

99

FP6

10

52663

10

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Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Qty per Kit	Total	Qty	Date	Status																									
D2648-3		Manufactured	No			220	Each	13.0000	5	5																												
																																						
Wearpad																																						
<table><tr><th>Location</th><th>Loc Qty</th><th>Loc Code</th><td></td><td></td></tr><tr><td>FG</td><td>12</td><td>357516</td><td>XS</td><td>10/07/20</td></tr><tr><td>45316</td><td>12</td><td></td><td></td><td></td></tr><tr><td>FP17</td><td>1</td><td></td><td></td><td></td></tr><tr><td>52516</td><td>1</td><td></td><td></td><td></td></tr></table>														Location	Loc Qty	Loc Code			FG	12	357516	XS	10/07/20	45316	12				FP17	1				52516	1			
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FG	12	357516	XS	10/07/20																																		
45316	12																																					
FP17	1																																					
52516	1																																					
D2656-13		Manufactured	No			220	Each	24.0000	1	1																												
																																						
Wearplate																																						
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FP020	12																																					
57354	12																																					
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Start Date: 6/3/2010

Required Date: 6/14/2010

Comments: IPP Rev:A New Issue 07-04-12 JLM
IPP Rev:B remove seq. 19 (handfinish wing walk) 08-04-30 DD verified
by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Qty per Kit	Total	Qty	Date	Status
D2907		Manufactured	No			220	Each	29.0000	1	1			



Wearshoe



Location

Loc Qty

Loc Code

FP

29

14654

29

D2909

Manufactured No

220

Each

30.0000

11

11



Spacer, Lama



Location

Loc Qty

Loc Code

LG

30

14091

30

259594

x11

BE 10/07/14

Thursday, June 03, 2010 11:23:23 AM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2904	Rev. B SHEET 1 OF 3
DATE 00.06.21		TITLE SA 315B SKIDTUBE ASSEMBLY	SCALE NTS
A	99.09.09	NEW ISSUE	
B	00.06.21	CHANGED ANGLES FOR HOLES	

PARTS LIST:

Qty -041	Qty -042	Part Number	Description
X		D2904-041	LH SKIDTUBE ASSEMBLY
	X	D2904-042	RH SKIDTUBE ASSEMBLY
2	2	D2646	CAP
4	4	D2648-3	WEARPAD
1	1	D2648-5	WEARPAD
1	1	D2656-13	WEARSHOE
1	1	D2656-33	WEARSHOE
1		D2904-1	SKIDTUBE
	1	D2904-2	SKIDTUBE
1	1	D2905	WEB
1	1	D2907	WEARSHOE
11	11	D2909	CROSS BOLT SPACER
2	2	D2910	SKIDTUBE DOUBLER
2	2	D2911	SKIDTUBE DOUBLER
2	2	D2912	SKIDTUBE DOUBLER
50	50	ALS7-1032-130 or AKS4-1032-130 or ALS4-1032-130 or ALS7-1032-130	INSERT
54	54	AN960JD10L	WASHER
256	256	MS20601AD4W3	RIVET
54	54	MS27039-1-08	SCREW

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Bd 10-6-03

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DATE 00.06.21		TITLE SA 315B SKIDTUBE ASSEMBLY	SCALE 1:20

GENERAL NOTES:

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. MAKE D2904-1 AND D2904-2 FROM D2914 EXTRUSION (INITIAL LENGTH = 142.0).
3. DAMAGE TOLERANCE ON BENDING:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. NO GOUGING IS ACCEPTABLE IN THE FLAT PORTION OF THE TUBE. GOUGES UP TO 0.020 ARE ACCEPTABLE IN THE BENT PORTION OF THE TUBE. TUBE O.D. SHOULD BE 3.150 ± 0.010 IN THE FLAT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
4. ALL HOLES DRILLED ON CENTERLINES EXCEPT THOSE NOTED BY SECTION C-C.
5. DRILL #30 HOLES ($\varnothing 0.128$ REF) TO LINE UP WITH $\varnothing 0.128$ HOLES IN D2910/D2911/D2912 DOUBLERS. C'SINK $\varnothing 0.239 \times 100^\circ$.
6. BOND D2905 WEB INTO D2904-1 (OR D2904-2) OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
7. WELDING TO BE DONE PER DART QSI 004.
8. AFTER DRILLING, BENDING, AND INSTALLING WEB & DOUBLERS, PERFORM THE FOLLOWING FOR $\varnothing 0.500$ HOLES ONLY:
 - CHAMFER HOLE $0.050 \times 45^\circ$
 - INSERT D2909 SPACER (11 PLACES)
 - WELD INTO PLACE
 - GRIND FLUSH
 - DRILL OUT SPACER TO $\varnothing 0.406$
9. FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 - MINIMUM YIELD TENSILE STRENGTH = 35 ksi
 - MINIMUM ULTIMATE TENSILE STRENGTH = 38 ksi
10. FINISH:
 - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2905 WEB AND D2910/D2911/D2912 DOUBLERS.
 - POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 1.0" ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
11. DRILL $\varnothing 0.297$ FOR ALS7-1032-130 INSERT USING DT8395 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH.

13865 n/m

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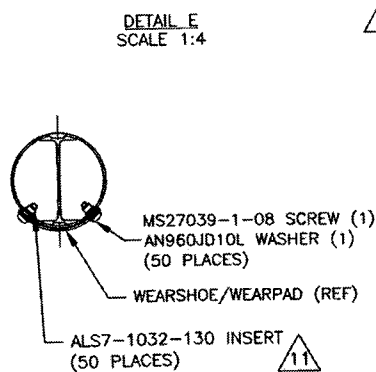
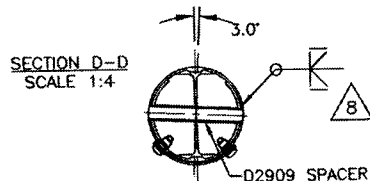
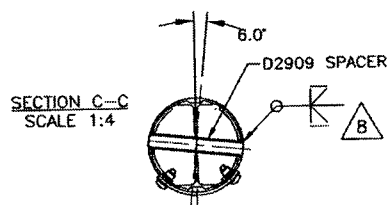
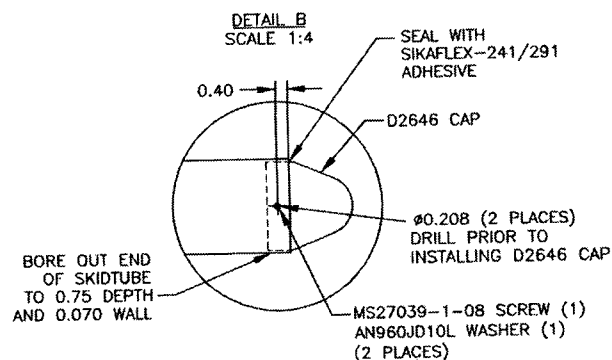
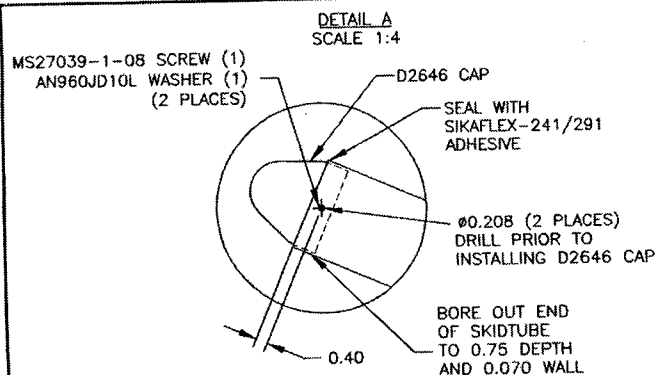
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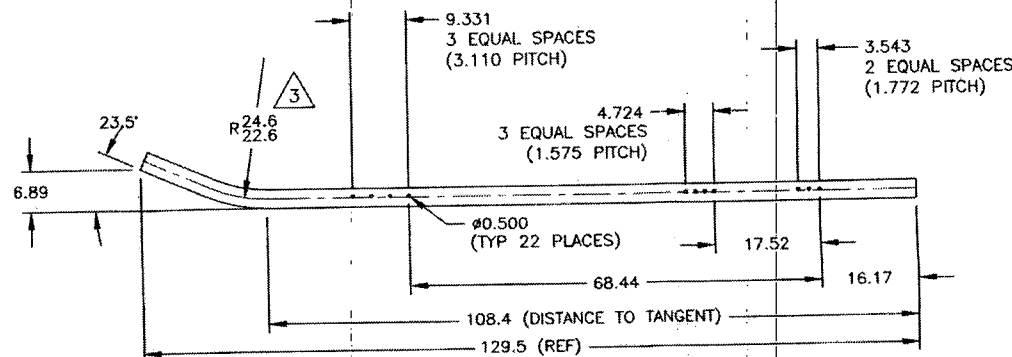
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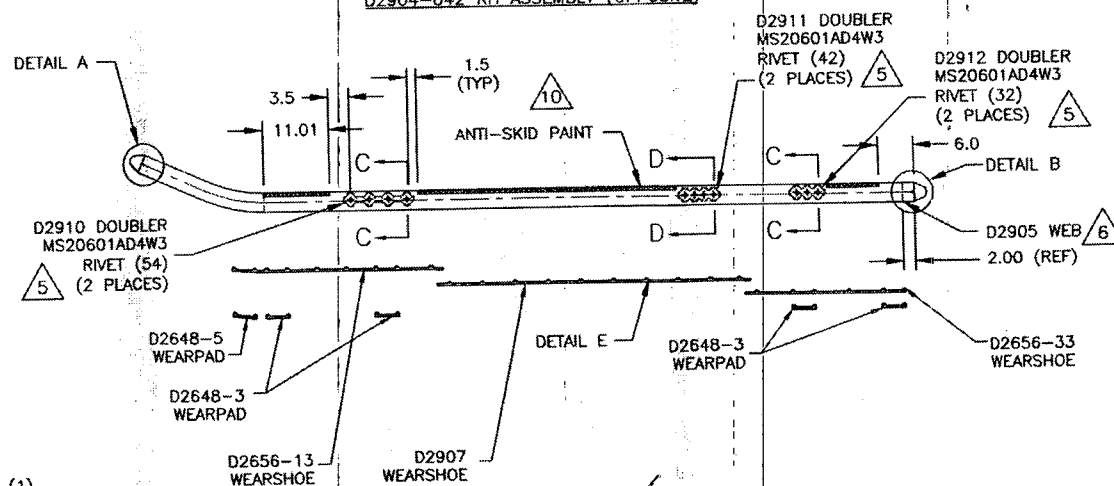
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D2904-1 BENDING/DRILLING DETAIL (SHOWN)
D2904-2 BENDING/DRILLING DETAIL (OPPOSITE)



D2904-041 LH ASSEMBLY DETAIL (SHOWN)
D2904-042 RH ASSEMBLY (OPPOSITE)



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DATE 00.06.21		TITLE SA 315B SKIDTUBE ASSEMBLY		SCALE 1:20			

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NO. 231

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 57326
Part number: D315 668 012
Description: Lama tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminium
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Raf. Dent. Date of Test Coupon 10.05.18

Welder Barclay Elliott Date of Test Coupon 10.05.18

The above named individual is qualified in accordance with AWS D17.1.2001 to weld